

## **REMARKS**

This is in response to the Office Action dated December 13, 2004, Claims 1-33 are pending in the present application. Claims 1-3, 13-15 and 23-33 stand rejected. Claims 6 and 27 are objected to.

Claims 1, 4-5, 6-7, 13, 16-18 and 26-28 are amended.

Applicants gratefully acknowledge Examiner's indication that claims 4-5, 7-12 and 16-22 comprise allowable subject matter.

### **Claims Objections – 37 C.F.R. 1.75(c)**

Claims 6 and 27 are objected to for the reason of improper dependency. Claims 6 and 27 are amended to be dependent from Claims 4 and 23 respectively. Thus, withdrawal of the objections to Claims 6 and 27 is requested.

### **Claims Rejections – 35 U.S.C. §102**

Claims 1-2, 13-14, 23-24, 26 and 30-33 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,915,249 to Spencer. It is respectfully submitted that Spencer does not anticipate Claims 1-2, 13-14, 23-24, 26 and 30-33. At the very least, Spencer does not teach *representing occurrence frequencies in a compressed format which includes a plurality of bin identifiers for a plurality of bins over which the occurrence frequencies are categorized*, as essentially recited in Claims 1 and 13.

Spencer discloses the use of compression to either (1) index compressed documents themselves (e.g., "Other more complicated inverted indices supporting

compression, and other attributes *of the document...*", Col. 9, lines 27-29), but not to compress the index; or (2) directly compressing the frequency data structures (e.g., Col. 6, line 66 - Col. 7, line 2), but this is a type of raw compression of the index file without any *categorizing of occurrence frequencies over bins* to achieve a compressed index. Hence, Spencer's raw compression of the index information cannot be said to teach "...representing occurrence frequencies ... in a compressed format in the index file, wherein the compressed format comprises a plurality of bin identifiers for a plurality of bins over which the occurrence frequencies are categorized" as recited in Claims 1 and 13.

With reference to Claim 23, Spencer's Col. 9, lines 25-51 and Fig. 3a are indicated as teaching Claim 23 recitations. Spencer does not teach an index compression where *parameters are mapped into bins* and *bin identifiers corresponding to bins are stored in the index file*, as essentially claimed in Claim 23. Spencer's disclosure in Col. 9, lines 25-51 is directed to applying its technique to a *compressed document* (See: Col. 9, lines 27-29) and does not specifically teach a compressed index that *maps parameter values into bins* and *stores the bin identifiers*. Spencer's Fig. 3a shows an inverted index with links to a static cache 208. But in Fig. 3a, Blocks 205-1..P which are shown as linked to tuples 213, are not *bins*. Blocks 205-1..P are described as "Each block 205 contains some number z of tuples...*The number is preferably predetermined and fixed*" (Col. 9, lines 56-58). Hence, Blocks 205-1 are collection of tuples of some arbitrary fixed size, and are hence not formed by "mapping parameter values...into..bins" to create a compressed index. Further, terms in the static cache 215 are not selected by any *bin*

type selection, but rather are based on a threshold (“... selected from the inverted index 200...total number of ...tuples 205 exceeds a predetermined threshold”, col. 10, lines 12-14). The tuples in lookup table 214 also do not teach Claim 23’s “mapping parameter values...” or “storing bin identifiers...” because they are links to blocks 205 which as discussed above do not teach Claim 23 recitations.

For at least the above reasons Spencer does not anticipate Claims 1 and 13. Furthermore, Claims 2 and 14, which depend from respective base claims 1 or 13, are patentably distinct from Spencer at least by virtue of their dependence from Claims 1 or 13. Hence, Applicants respectfully request withdrawal of the anticipation rejections of Claims 1-2 and 13-14.

For at least the above reasons Spencer also does not anticipate Claim 23. Furthermore, Claims 24, 26, 28 and 30-33, which depend from respective base claim 23, are patentably distinct from Spencer at least by virtue of their dependence from the Claim 23. Hence, Applicants respectfully request withdrawal of the anticipation rejections of Claims 24, 26, 28 and 30-33.

#### **Claims Rejections – 35 U.S.C. §103(a)**

Claims 3, 15 and 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Spencer in view U.S. Patent No. 6,704,725 to Lee.

Claim 27 is rejected under 35 U.S.C. §103(a) as being unpatentable over to Spencer.

Claim 29 is rejected under 35 U.S.C. §103(a) as being unpatentable over Spencer in view U.S. Patent App. Pub. No. 2002/0049760 A1 to Scott et al.

The rejection of Claims 3, 15, 25, 27 and 29 is based, in part, on Spencer as disclosing all the elements of Claims 1, 13 and 23, from which claims 3, 15, 25, 27 and 29 depend. However, as discussed above, Spencer does not disclose or suggest, e.g., *representing occurrence frequencies in a compressed format which includes a plurality of bin identifiers for a plurality of bins over which the occurrence frequencies are categorized*, as essentially recited in Claims 1 and 13. And further, Spencer also does not disclose *storing bin identifiers that identify bins in index files*, as essentially claimed in Claim 23.

With respect to rejection of Claims 3, 15 and 25, Lee does not cure the deficiencies of Spencer in this regard. Lee is directed to using normalization (col. 3, lines 1-7) or probability density functions (col. 3, lines 8-11) to search multimedia data. Lee does not disclose either *categorizing occurrence frequencies over bins* (Claims 1 and 13) or *mapping parameters over bins and then storing bin identifiers* (Claim 23).

Referring to the rejection of Claim 29, Scott does not disclose *computing a parameter value for one of the bins as a weighted average of parameter values*, as essentially claimed in Claim 29. Scott's paragraph [0027] discloses using hash based file IDs to retrieve files. But hash file ID based file retrieval does not teach *computing a parameter value for one of the bins as a weighted average of parameter values*, since compressed indexing with *mapping and storing of parameter values over bins* that uses

weight average versus hashing of file IDs are very different operations. Hence, Scott does not disclose any *weighted average* being used to perform compressed indexing.

Therefore, claims 3, 15 and 25 are patentable and non-obvious over the combination of Spencer and Lee for at least the above reasons given for claims 1, 13 and 23. Claim 27 is patentable and non-obvious over Spencer for at least the above reasons given for Claim 23. Claim 29 is patentable and non-obvious over the combination of Spencer and Scott for at least the above reasons. Accordingly, withdrawal of the obviousness rejection of Claims 3, 15, 25, 27 and 29 is requested.

The Examiner's withdrawal of the claim rejections is respectfully requested. Early and favorable reconsideration is respectfully requested.

Respectfully submitted,



Frank V. DeRosa  
Reg. No. 43,584  
Attorney for Applicant

F. Chau & Associates, LLC  
130 Woodbury Road  
Woodbury, NY 11797  
TEL: (516) 692-8888  
FAX: (516) 692-8889